III. MARICOPA-STANFIELD IRRIGATION & DRAINAGE DISTRICT

Maricopa-Stanfield Irrigation & Drainage District (MSIDD) is located in northwestern Pinal County and contains an area of approximately 148,000 acres centered about 40 miles south of Phoenix and 12 miles northwest of Casa Grande, as shown on Figure L-NIA-6.

CAP water is the main source of surface water for the district. Irrigation wells acquired from district growers serve as the source of groundwater for the district.

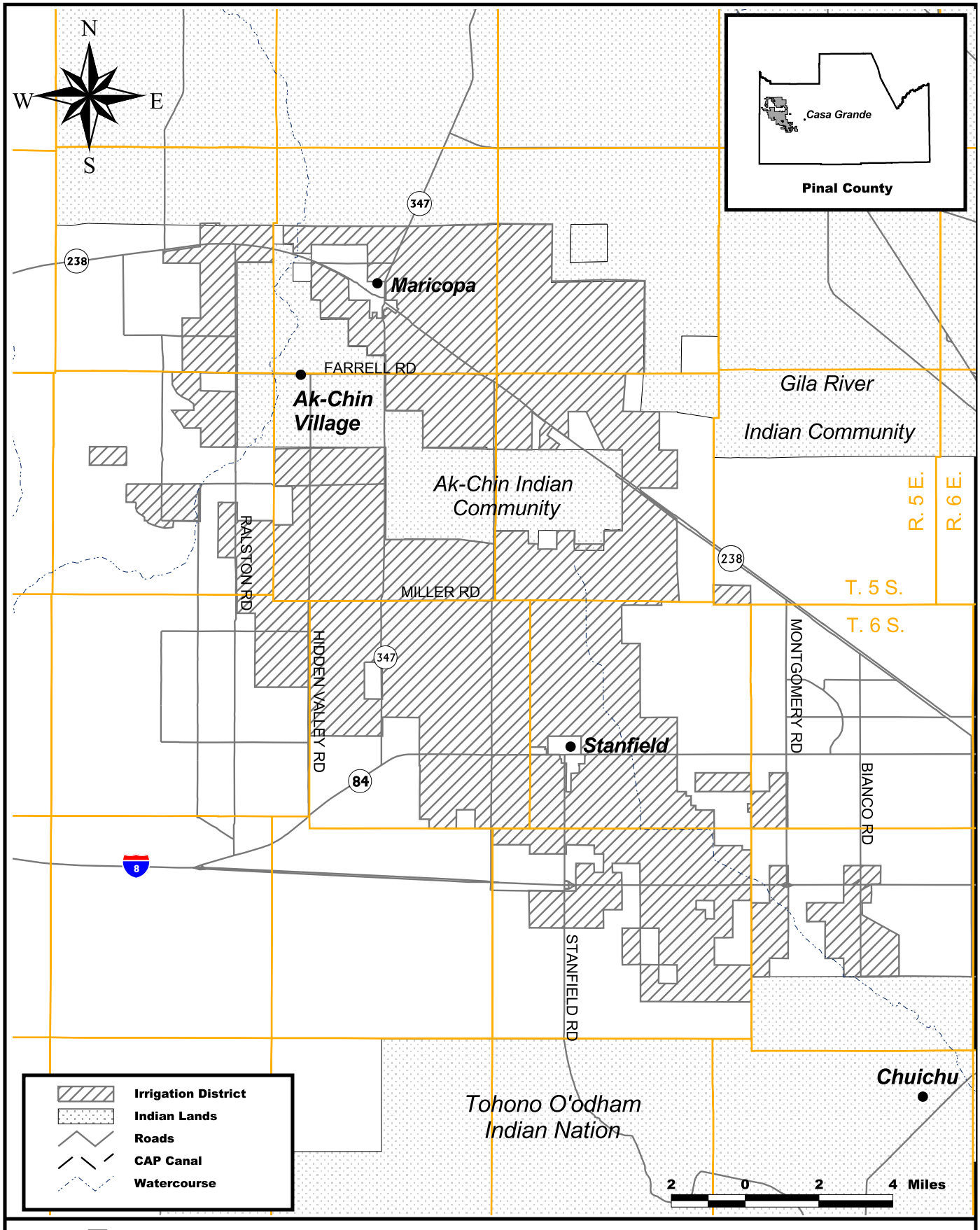
The district received its CAP water through one aqueduct turnout and operates 75 miles of main conveyance canals, 136 miles of lateral canals and pipelines, 186 farm turnouts and 396 irrigation wells. Construction of all federally funded CAP facilities in the district was completed in 1989. The Santa Rosa Canal, operated by the district, is currently used jointly by the district with the CAIDD and the Ak-Chin Indian Community. The district's annual water requirements range between 250,000 and 300,000 af with 1995 water deliveries totaling 281,047 af. The greater district area encompasses approximately 148,000 acres with 87,000 acres of irrigable land receiving water service from the district. In 1995, the district delivered water to approximately 66,000 acres. Cotton, small grains, pecans, grapes, and specialty crops are grown within the district. Approximately 12,000 connections are served.

In the MSIDD service area in 1998, a total of 232,908 af of water were produced and delivered. Of that total, 77,517 af, or 33 percent, was from groundwater and 155,391 af, or 67 percent, was from CAP.

III.A. CAP Water Allocation History

The MSIDD entered into a contract with the United States and CAWCD for 20.48 percent of the available NIA pool, effective October 1, 1993. Had the 1992 NIA reallocation process been completed, MSIDD's percentage of the available NIA pool would have increased to 22.75. In late 1993, MSIDD entered into a two-party letter agreement with CAWCD under which MSIDD and CAWCD "mutually agreed to waive certain rights and obligations under the Water Service Subcontract." The United States is challenging these agreements in ongoing litigation regarding operation of the CAP. Nevertheless, MSIDD has contracted for CAP water pursuant to this agreement from the Ag Pools on an annual basis and at a rate reduced from the original requirements.

Under the Settlement Alternative, MSIDD would voluntarily relinquish its allocation of CAP water in exchange primarily for debt relief and access to affordably priced CAP Ag Pool water for the next 30 years (see Chapter II for full description of all alternatives). Under Non-Settlement Alternative 3A, MSIDD would be offered and would accept an allocation of the available NIA CAP water supply. For purposes of analysis only, this percentage amount has been estimated at 26,497 afa. That CAP water would be delivered for a 50-year contract period (i.e., from 2001-2051) on an as-available basis, with less water anticipated as being available later in time. The CAP water would be used to supplement water supply demands over the next 50 years and would help reduce the continuing dependence on pumping groundwater from an overdrafted groundwater system. Under all the other alternatives, MSIDD would not receive an additional allocation. It should be noted that, even without an allocation, CAP water would continue to be available to MSIDD from the Ag Pool, which is comprised of excess water.



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CAP Allocation Draft EIS
General Location Map
Maricopa-Stanfield Irrigation & Drainage District

June 2000

Figure #L-NIA-6

Under the Settlement Alternative, MSIDD would receive 27.02 percent of the Ag Pool. Under all other alternatives, MSIDD would receive 32.4 percent of the Ag Pool. Table L-NIA-10 outlines the proposed CAP allocation by alternative.

Table L-NIA-10
CAP Allocation DEIS
MSIDD – Proposed Additional CAP Allocation

Alternative	Additional Allocation[a] (in afa)	Priority
Settlement Alternative	0	-
No Action	0	-
Non-Settlement Alternative 1	0	-
Non-Settlement Alternative 2	0	-
Non-Settlement Alternative 3A	26,497[b]	NIA
Non-Settlement Alternative 3B	0	-
Existing CAP Allocation	81,500[c]	NIA

Notes:
[a]All NIA allocations are percentages of the available NIA CAP water supply. They are converted to fixed af amounts only for ease of calculation in the draft EIS. See Appendix B for the calculation of NIA allocation numbers.
[b]This allocation is MSIDD's calculated percentage from the uncontracted NIA pool.
[c]Based on 20.48 percent of the available NIA CAP water supply. The status of this allocation is in dispute.

III.B. Water Demand and Supply Quantities

MSIDD contains 82,792 CAP-eligible acres and 10,200 acres of CAP excess land. No new net acreage can be brought into production as a result of the 1980 GMA. Currently, MSIDD uses approximately 172,035 afa of CAP water, of which 26,130 afa are provided as in-lieu groundwater recharge. Additionally, MSIDD pumps 99,794 afa of groundwater. This water use pattern is based on a five-year average from 1998 to 1994. This water use pattern could change if acreage is taken out of production due to economic reasons or urbanization. Reductions in total water use reflect reductions in farmed acres due to water costs or the lack of access to CAP water.

In order to estimate impacts for the next 50 years, assumptions were made regarding the availability and pricing of CAP water for each alternative. These assumptions are fully described in Appendix A, Background Assumptions. Using the CAP water availability as a base, a model was developed (as described in Appendix D, Socioeconomic Analysis) to project water use and the number of cropped acres based on economic decisions. For example, the economic model predicts whether or not a certain wheat will be grown based on the marginal costs of growing wheat, given the price and availability of water. The water uses projected by the economic model were incorporated into the groundwater model to verify MSIDD's ability to pump and afford the projected groundwater use. Acreage was also decreased based on urbanization due to population growth.

III.C. Specific Construction-Related Impacts

No new water delivery facilities would be required with one exception. Under the Settlement Alternative, RRA restrictions may be lifted and MSIDD may desire to build new facilities to deliver CAP water to previously ineligible lands. This possibility is considered speculative at this time and is beyond the scope of this EIS.

III.D. Environmental Effects

Since construction of water delivery facilities would not likely be required, the primary environmental impacts to MSIDD would result from the availability of CAP water and its cost, under the different alternatives.

III.D.1. Land Use

Table L-NIA-11 shows the land use pattern for years 2001 to 2051 within the MSIDD area. No acreage is projected to be retired and fallowed during the study period, but approximately 4,200 acres are projected to be urbanized.

Table L-NIA-11
CAP Allocation DEIS
MSIDD – Projected Agricultural Land Use
(Acres)

Alternative	Year	Land Farmed	Land Urbanized Per Time Step	Land Fallowed Due to Economic Reasons per Time Step
Settlement Alternative	2001	61,719	0	0
	2004	60,453	1,266	0
	2017	59,405	1,048	0
	2030	58,591	814	0
	2043	58,014	577	0
	2051	57,499	515	0
No Action	2001	61,719	0	0
	2004	60,453	1,266	0
	2017	59,405	1,048	0
	2030	58,591	814	0
	2043	58,014	577	0
	2051	57,499	515	0
Non-Settlement Alternative 1	2001	61,719	0	0
	2004	60,453	1,266	0
	2017	59,405	1,048	0
	2030	58,591	814	0
	2043	58,014	577	0
	2051	57,499	515	0
Non-Settlement Alternative 2	2001	61,719	0	0
	2004	60,453	1,266	0
	2017	59,405	1,048	0
	2030	58,591	814	0
	2043	58,014	577	0
	2051	57,499	515	0
Non-Settlement Alternative 3A	2001	61,719	0	0
	2004	60,453	1,266	0
	2017	59,405	1,048	0
	2030	58,591	814	0
	2043	58,014	577	0
	2051	57,499	515	0
Non-Settlement Alternative 3B	2001	61,719	0	0
	2004	60,453	1,266	0
	2017	59,405	1,048	0
	2030	58,591	814	0
	2043		577	0
	2051		515	0

III.D.2. Archaeological Resources

Very few surveys, most of them linear (e.g., Neily 1991), have been performed within this entity's boundaries. Areas of high and moderate cultural resource sensitivity are primarily associated with various tasks pertaining to Reclamation's Salt-Gila Aqueduct-CAP surveys (e.g., Teague and Crown 1983). Prehistoric sites are mainly related to non-irrigation agriculture and resource processing, and include rock features, roasting pits, fire-cracked rock concentrations, artifact scatters, and small farmsteads. There is evidence that sites to the south (e.g., Shelltown, the Hind Site) were involved in the Hohokam shell exchange system (Marmaduke and Martynec 1993). Sites with evidence of shellcraft in this entity would be particularly important in answering questions about the nature of prehistoric trade networks. The entity's vicinity to the Ak-Chin Indian Community also suggests that protohistoric and historic Pima and Maricopa sites—including petroglyphs and pictographs—might be present (e.g., Berry and Marmaduke 1980; Marmaduke et al. 1983). Historic sites related to water control (e.g., canals) and transportation (e.g., roads, railroads, and associated features) also are likely. It is not known whether this entity has a local historic preservation program. Cultural resource sensitivity areas in this entity are shown in Figure L-NIA-7. Based on the limited data used to generate the cultural sensitivity designations, the potential for cultural resource impacts in this entity is low to moderate. Urbanization of farmlands could impact any intact cultural / deposits that might be preserved below the plow zone. Mitigation for these potential impacts would be determined by local jurisdictions. No impacts to cultural resources are expected from land fallowing.

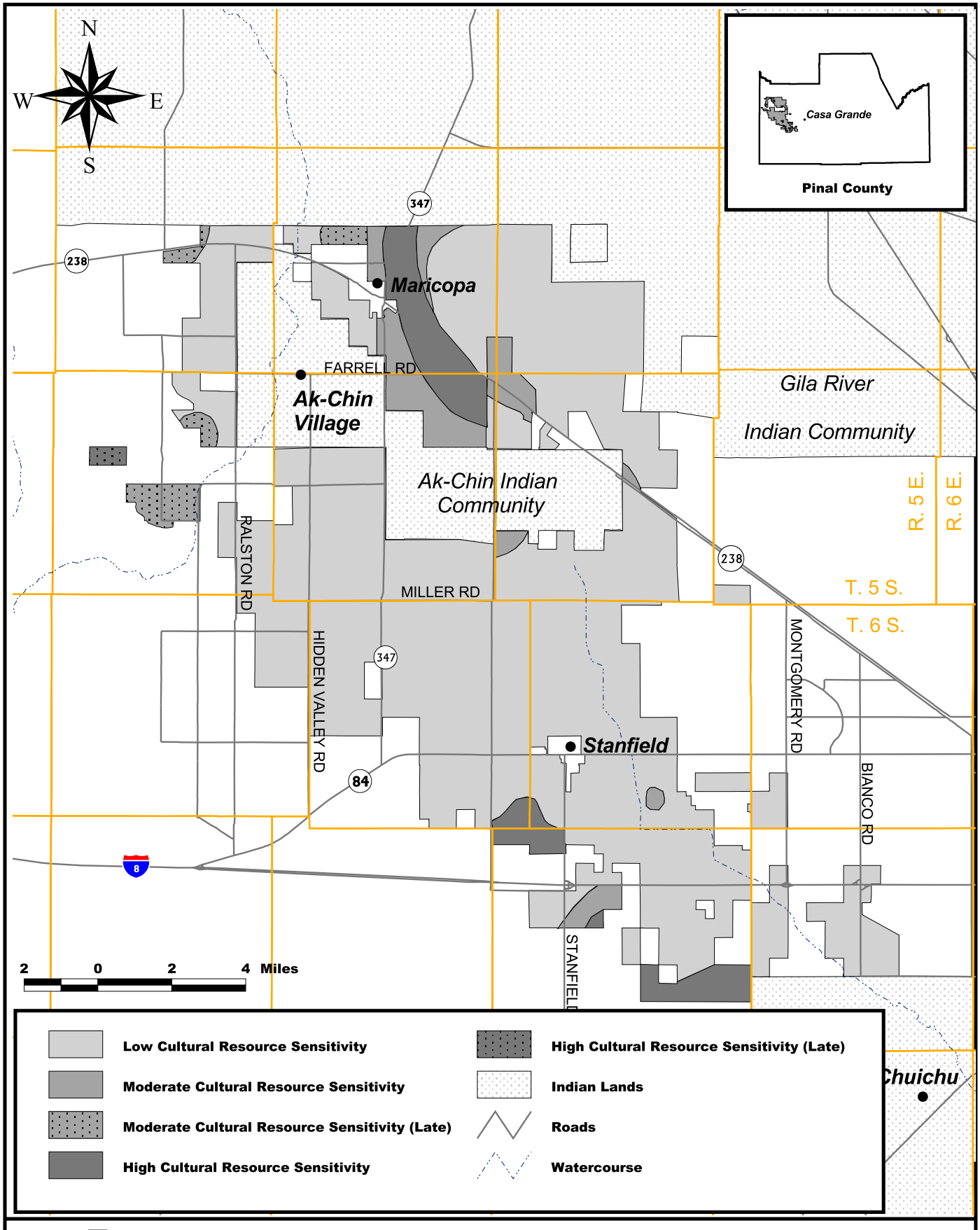
III.D.3. Biological Resources

Table L-NIA-11 shows land use over the period of study by alternative. Land stays in agricultural production or is converted to urban uses. When conversion of agricultural lands to urban use occurs, loss of natural habitat or wildlife is minimal. However, adjacent lands may contain wildlife that might be impacted such as burrowing owls, nests of local birds, and habitat for small mammals.

III.D.4. Water Resources

MSIDD has met historical irrigation demands using groundwater, supplemented in later years with CAP water. Groundwater levels have declined historically in response to the groundwater pumping. The TDS concentration of groundwater ranges generally from about 500 to 1,000 ppm. MSIDD has experienced subsidence historically, due to the groundwater level declines.

Presented in Table L-NIA-12 are estimated changes in groundwater levels from 2001 to 2051. Estimated groundwater level impacts for each alternative (changes from levels under the No Action Alternative) are also shown. Groundwater conditions were estimated in the analysis for both the northern and southern part of MSIDD. Two values are presented in Table L-NIA-12 for each alternative, representing groundwater levels for (in order) the northern and southern part of MSIDD. Estimated groundwater level changes are larger in the southern part of MSIDD, although the changes relative to the No Action Alternative are similar in both the northern and southern areas.



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CAP Allocation Draft EIS
Cultural Resources
Maricopa-Stanfield Irrigation & Drainage District

June 2000

Figure #L-NIA-7

Under the No Action Alternative, groundwater levels would rise from 2001 to 2017, reflecting the availability of CAP water for in-lieu recharge during that period. After 2017, CAP water would only be available from the Ag Pool, which results in greater groundwater pumping and declining groundwater levels. Overall, groundwater levels under the No Action Alternative would decline by about 30 to 56 feet through 2051. The lower groundwater levels would cause an increase in groundwater pumping costs and a continuation of the subsidence that has been historically experienced. Groundwater quality impacts would not be anticipated.

Groundwater levels under the Settlement Alternative and all Non-Settlement Alternatives would also decline by year 2051. The relatively small differences in groundwater levels primarily reflect differences in the availability of CAP water to MSIDD from the Ag Pool.

Table L-NIA-12
CAP Allocation Draft EIS
MSIDD – Groundwater Data Table

Alternative	MSIDD*	
	Estimated Groundwater Level Change from 2001-2051 (in feet)	Groundwater Level Impact** (in feet)
No Action	-30/–56	--
Settlement Alternative	-36/–57	-6/0
Non-Settlement Alternative 1	-29/–56	1/0
Non-Settlement Alternative 2	-37/–62	-7/–6
Non-Settlement Alternative 3A	-18/-44	12/12
Non-Settlement Alternative 3B	-52/-74	-22/–17

* Values correspond to the MSIDD North and MSIDD South sub-areas, respectively.
** Computed by subtracting the estimated groundwater decline from 2001 to 2051 for the No Action Alternative from the estimated change in groundwater level for the same period for the alternative under consideration. The estimated impact is considered to be more accurate than the estimated change in groundwater levels.

III.D.5. Socioeconomic

No land fallowing is expected to occur in MSIDD over the study period as a result of the reallocation of CAP water. Therefore, no loss of revenues is expected due to the reallocation of CAP water.

Table L-NIA-13
CAP Allocation Draft EIS
MSIDD Estimated Lost Gross Agricultural Revenues 2001-2051 ($)

Alternative	Lost Gross Revenues 2001-2051
Settlement Alternative	0
No Action	0
Non-Settlement Alternative 1	0
Non-Settlement Alternative 2	0
Non-Settlement Alternative 3A	0
Non-Settlement Alternative 3B	0